

It is difficult to effect a complete separation of the various soluble constituents of the *Phormium* plant by means of precipitation with basic lead-acetate, as described in § 1 of this Report. The following table gives some idea of the partial separations thus effected:—

Lead precipitate contains pyrocatechin and acids, a little bitter principle on agitation with ether.		Filtrate from lead precipitate contains much sugar and much bitter principle on agitation with ether.	
The residue contains the acids.	The ethereal solution contains traces of the bitter principle and resin.	The residue contains the whole of the sugar.	The ethereal solution contains the bitter principle nearly pure.

#### APPENDIX TO REPORT.

The following analyses of the seeds and capsules of the *Phormium tenax* were made in 1865 by Dr. Adriani. In the belief that they may prove a useful addition to a report on *Phormium tenax*, I add them here as an Appendix. I have not had the materials for verifying them at my disposal.

#### Analyses of *Phormium tenax*.

					Seeds.	Capsules.
Moisture	...	...	...	...	8.0	10.7 per cent.
Oil	...	...	...	...	20.1	1.0 "
Resin	...	...	...	...	3.8	2.6 "
Mucilage	...	...	...	...	14.3	24.0 "
Albuminoids or flesh-formers	...	...	...	...	18.3	6.9 "
Fibre	...	...	...	...	31.0	47.9 "
Ash	...	...	...	...	4.5	6.9 "
					100.0	100.0

#### APPENDIX E.

##### No. 9.

#### REPORT respecting the *Phormium* CULTIVATIONS.

##### 1. Wellington.

THE seedlings of the different varieties of *Phormium* referred to in last Report\* have on the whole made good progress during the past year.

They have now been two years in the ground, and they have attained the same and in some cases even a larger size than the transplanted specimens of the same varieties which were planted out at the same time for comparison. The result of the experiment, so far, is to show that it is more desirable, in establishing cultivations, to raise the plants from seed, instead of transplanting roots. The advantage is gained in the more rapid and powerful growth, and the small cost of the process. These experiments also show that, on the whole, the most important varieties may be depended on to come true from the seed; an important fact, which was hardly anticipated from experience of younger plants.

The following is a note of the progress of the plants of the different varieties during the period from July, 1872, to July, 1873:—

No. 1. *Raumoa*.—This variety shows great irregularity of growth, chiefly on account of poor clay soil. Number of fans average 8; length of leaf, 3 feet.

No. 2. *Parekoritawa*.—Several plants are not true to description of the original characters, as some have dark brown or black-edged leaves. Number of fans average 8; length of leaf, 4 feet.

No. 3. *Huhiroa*.—Generally true to description. Number of fans 9; length of leaf, 4 feet.

No. 4. *Takaiapu*.—Generally true to description. Number of fans 9; length of leaf, 5 feet.

No. 5. *Korako*.—Generally correct to description in three-fourths of the specimens; the others have varied to orange-margined leaf. Number of fans 9, length of leaf, 5 feet.

No. 6. *Atiraukawa*.—Number of fans 10; length of leaf, 5 feet.

The above six varieties grow in good but unequal soil at the bottom of a gully, and have made good progress during the last year in the growth, length, and number of leaves, especially in rich moist patches. Some of the varieties have already put out many young fans, others a few, and in the case of *Takaiapu* very few. The further growth of the whole will be checked by the closeness of the plants, so that it will be necessary to thin them.

In No. 2, *Parekoritawa*, the variegated flax, no appearance of striped variegation has as yet shown except in two plants, where faint traces may be observed.

With regard to a tendency, formerly noted, in all the varieties to revert to the orange-bordered leaf of the variety 1, a careful examination will probably lead to the conclusion that another year's growth has tended more to confirm the described characters of the varieties than depart from them. Many instances in every variety no doubt show the orange-bordered leaf.

Of No. 1, *Raumoa*, and No. 6, *Atiraukawa*, several seedlings were planted out on a dry clay bank, well broken up, but no progress has been made. Number of stools 4, length of leaf, 2 feet.

\* Appendix to Journals, House of Representatives 1872, G. No. 17.